Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Coldwater Creek

Water Body Segment at a Glance:

County: St. Louis
Nearby City: Black Jack
Water Body ID: 1706
Impaired Length: 6.9 miles
Watershed Size: 44.5 square miles
Pollutants: Bacteria
Chloride
Low Dissolved Oxygen
Source: Urban Nonpoint Sources
(no source cited for Low DO)


State Map Showing Location of Watershed

Scheduled for TMDL development: 2012 for bacteria; 2014 for chloride; 2017 for low D.O.

Description of the Problem

Designated Beneficial uses of Coldwater Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Industrial
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

Uses that are impaired

- Protection of Warm Water Aquatic Life (chloride and low dissolved oxygen impairments)
- Whole Body Contact Recreation – Category B (bacteria impairment)

Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E.coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.
- The criteria for chloride are found in 10 CSR 20-7.031 Table A. The chronic criterion is 230 milligrams per liter (mg/L or parts per million) and the acute criterion is 860 mg/L.
- Also in Table A, the criterion for dissolved oxygen in streams is a minimum of 5 mg/L.

Background information and water quality data
Coldwater Creek is an urban stream that flows east through northern St. Louis to the Missouri River. It passes through or near the communities of Florissant, Black Jack and Spanish Lake. The evidence for the impairments is based on data collected by the U.S. Geological Survey, or USGS, from 2001-2007.

Low Dissolved Oxygen
Water quality conditions in Coldwater Creek are not protective of aquatic life. Dissolved oxygen is important as many aquatic organisms require high levels of oxygen to survive. For dissolved oxygen, if more that 10 percent of measurements in a water body fail to meet the water quality criterion that water body is judged to be impaired. In the case of Coldwater Creek, 13 of 55 samples (23.6 percent) did not meet the water quality criterion (Figure 1). While no source has been identified for the low dissolved oxygen, it is likely caused by urban nonpoint source, like the chloride and bacteria impairments, since urban stormwater runoff is known to wash many types of pollutants from the watershed into its receiving water body.

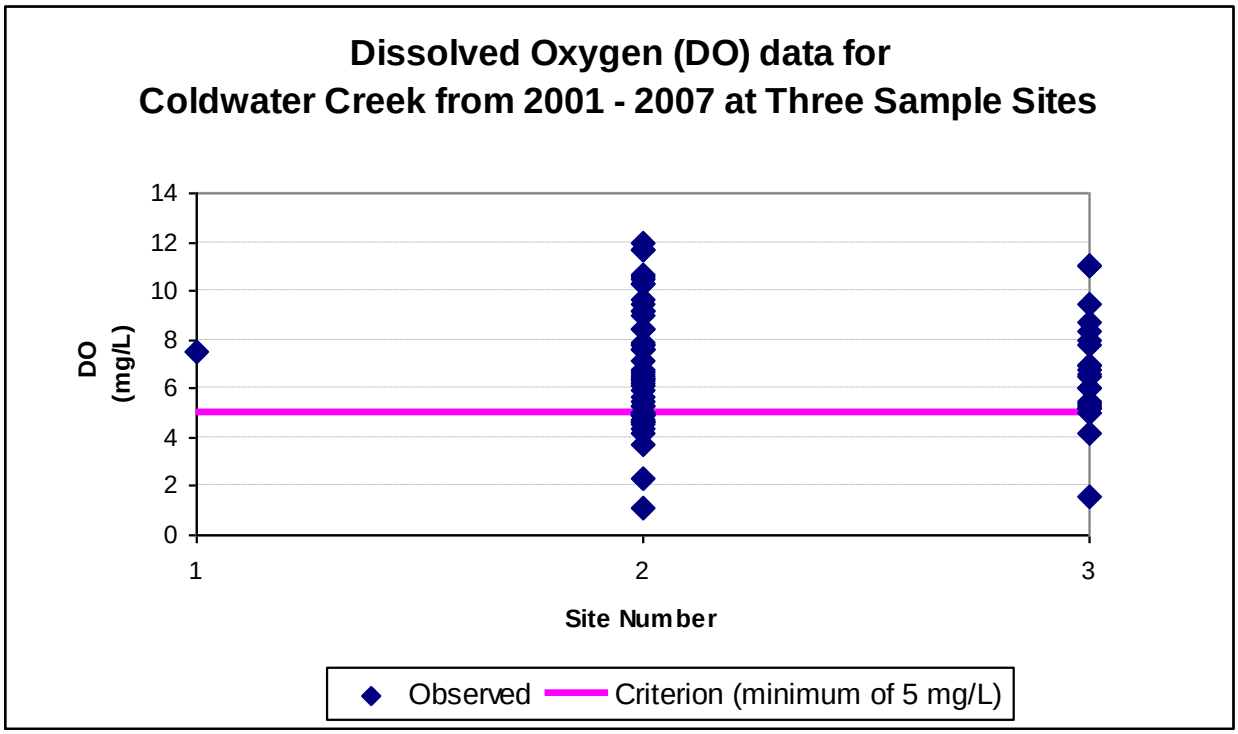


Figure 1.

Chloride

The Listing Methodology stipulates that only one exceedance of the chloride criteria in the last three years of available data is necessary to constitute an impairment. Chloride data from the USGS is available from 2001 – 2005 and from 2007 (Figure 2). These USGS data show five exceedances of the 230 mg/L criterion, with two occurring within the last three years.

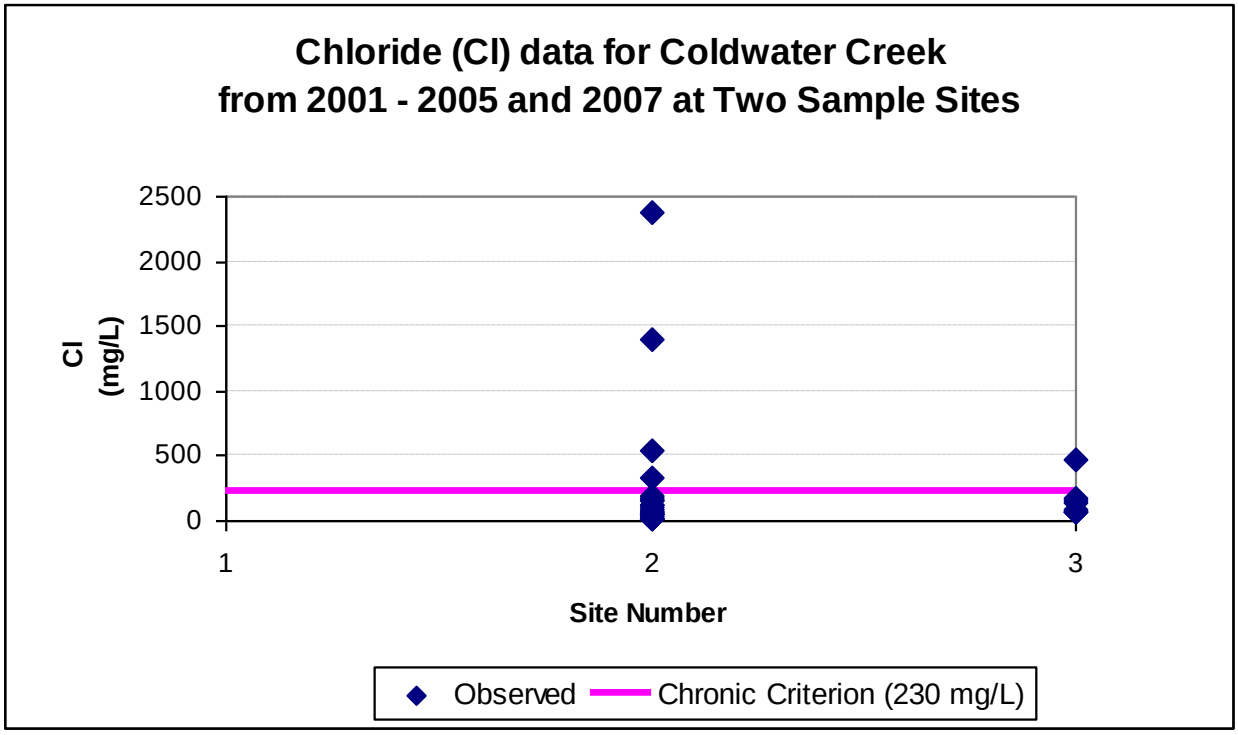


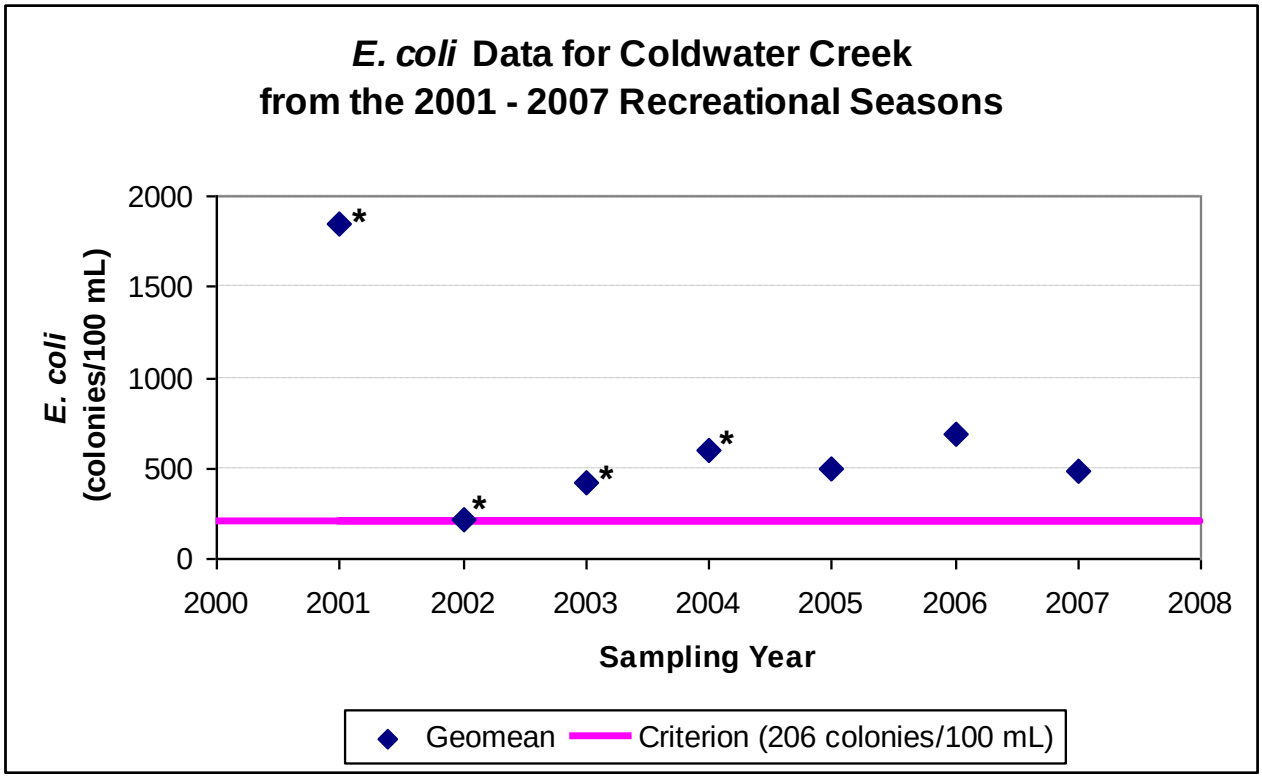
Figure 2.

Bacteria

High counts of *E. coli* are an indication of fecal contamination and an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli* are bacteria found in the intestines of warm-blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. Missouri's whole body contact bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The level of risk correlating to the category B criterion is no more than 10 illnesses per 1,000 swimmers in fresh water (1 percent).

Coldwater Creek is designated as Category B for the whole body contact recreation use, which means it has places deep enough for total immersion (i.e., swimming), but they may be on private lands or inaccessible to the public. The USGS bacteria data were gathered in Coldwater Creek from 2001-2007. The listing methodology states that, to be considered not impaired, a water body must meet the water quality criterion in each of the last three years of available data and that the

geometric mean must consist of at least five data points within the recreational season. In Coldwater Creek, the geomean exceeded the criterion of 206 col/100 mL for Category B during the recreational season in all of the last three years for which there is available data (Figure 3).

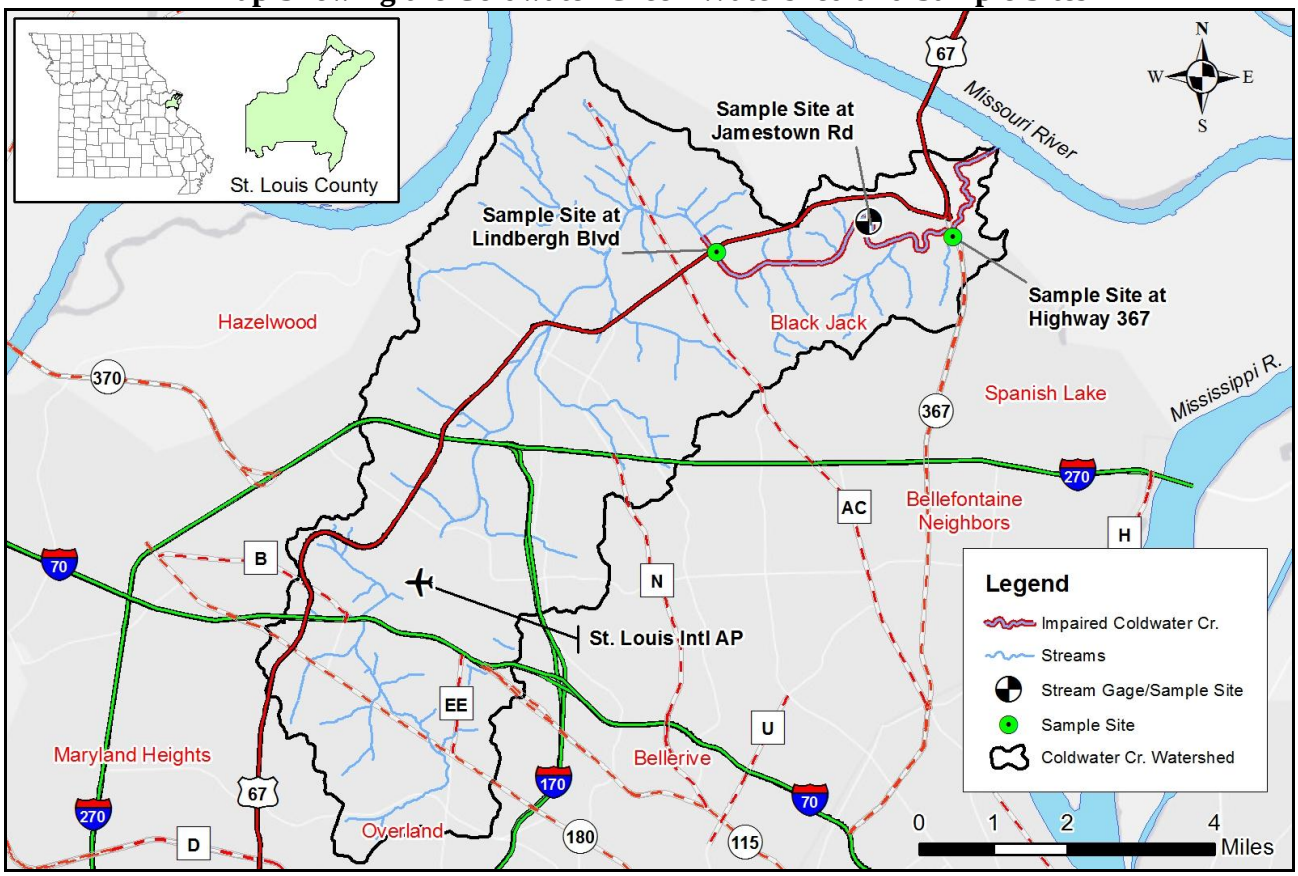


* Geomean calculated using fewer than five (5) samples.

Figure 3.

There is a map of Coldwater Creek on the following page showing the impaired segment and the sampling sites.

Map Showing the Coldwater Creek Watershed and Sample Sites



NOTE:
The final TMDLs developed for Coldwater Creek will use the most recent available data.

For more information call or write:
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